Implementation and introduction of the COSPAS SARSAT system in South Africa

Dirk Cornelissen
Network Centre Operations - Maritime
Telkom SA Limited
November 2006

What is the COSPAS SARSAT programme?

- International COSPAS-SARSAT Programme Agreement between Canada, France, USA and then USSR.
- Agreement is open for accession by other states wishing to supply space segment capabilities
- States non-party to above can participate by notifying one of the Depositaries of the Agreement (Secretary-General of IMO or ICAO) of their association with the program as either Ground Segment provider or User State.

Objective of signatory's association

- Contribute to long-term operation of the system.
- Provide distress alert and location data from the system to the International community in support of Search & Rescue operations on a non-discriminatory basis.
- Support, by providing these distress alert and location data, the objectives of IMO and ICAO concerning search and rescue.
- Cooperate with other national authorities and relevant international organizations in the operation and co-ordination of the system.

Responsibilities of signatories association

- Adhere to the technical specifications and operating procedures set by the Council for the purpose of ensuring adequate system performance.
- To provide, as agreed with the Council, appropriate performance data in order to confirm compatibility of its Ground System equipment with the system.
- To advise the Council or the competent international organization of its point of contact for distress alert purposes.
- To make use of radio beacons for operation in the System, the characteristics of which comply with ITU specifications

Responsibilities of signatories association

- To maintain, as applicable, a radio beacon register.
- To exchange COSPAS-SARSAT data in a timely and non-discriminatory manner, in accordance with procedures agreed with the Council.
- To participate, as necessary in appropriate meetings of the Programme convened by the Council, including open meetings of the Council and its subsidiary organs, with a view to resolving relevant administrative, operational and technical issues.
- To fulfill any other requirement as may be agreed with the Council.

Introduction of the system in South Africa

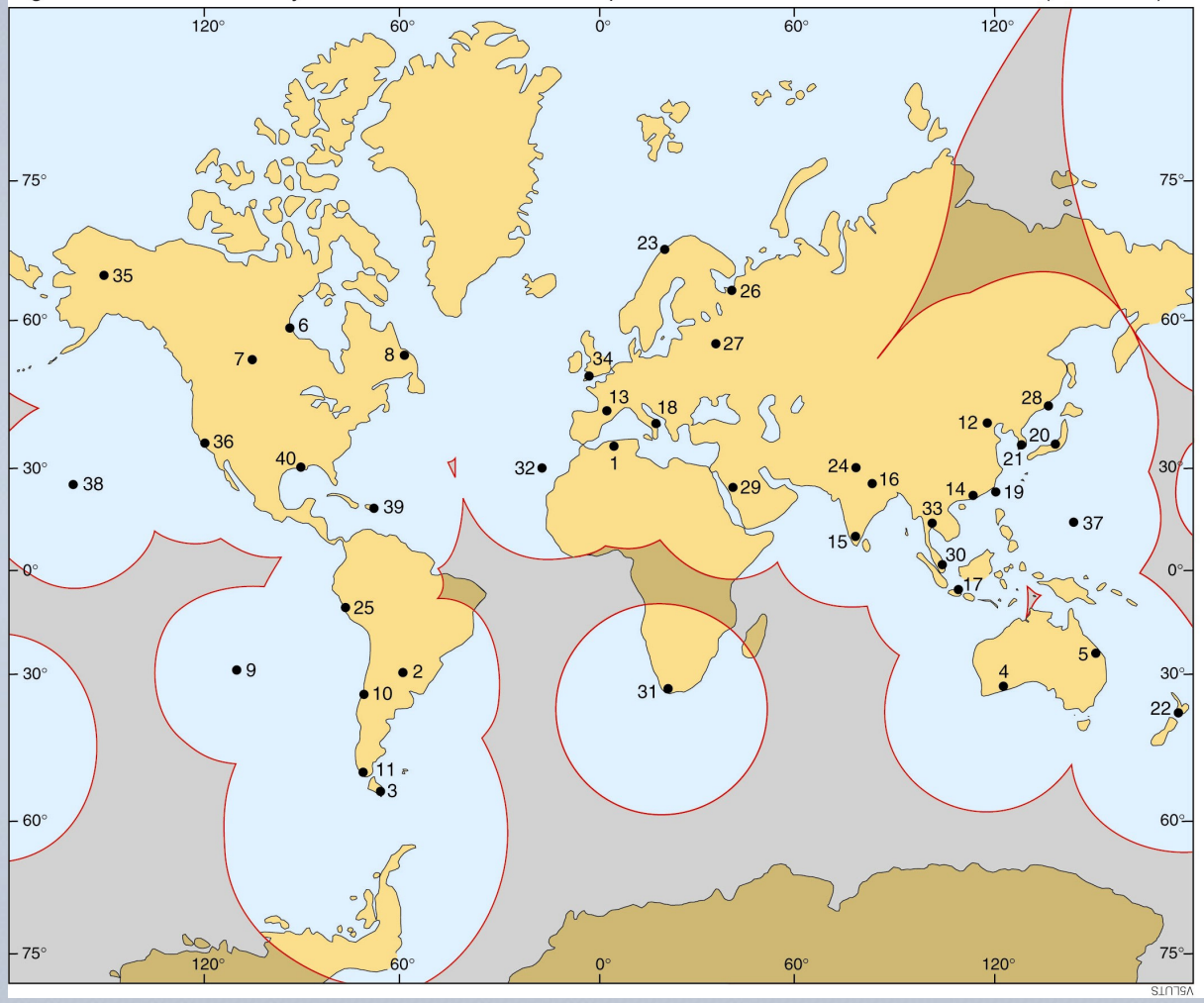
- **COSPAS SARSAT system introduced in SA in February 1999 with the installation of a single Local User Terminal (LUT) and Mission Control Centre (MCC) at Cape Town Radio in Milnerton in Cape Town.**
- **The system is operated by Telkom SA Ltd on behalf of the Department of Transport, who is the signatory to the agreement.**
- **The ASMCC entered Initial Operational Capability (IOC) on 7 February 2001 and achieved Full Operational Capability (FOC) on the 7 May 2001. The ASMCC was integrated into the Southwest Pacific DDR with Australia (AUMCC) as the nodal.**

Management of the system in South Africa

- The system is managed by Telkom SA Ltd on behalf of the Department of Transport.
- Telkom provides the operating personnel, technical support, maintenance and other programs and software upgrades to ensure the system is kept compliant with all the specifications as agreed to by council on a regular basis.
- Two representatives from Telkom, together with representatives from DOT and SAMSA (MRCC), attend the yearly Joint Committee (JC) meeting and one the yearly Council meeting to provide input and support and to stay up to date with all developments on a technical and operational level as required by association to the Programme.

Coverage area of the system

Figure 20 - Satellite Visibility Area of COSPAS-SARSAT Operational LEOSAR Local User Terminals (LEOLUTS)



NOTES

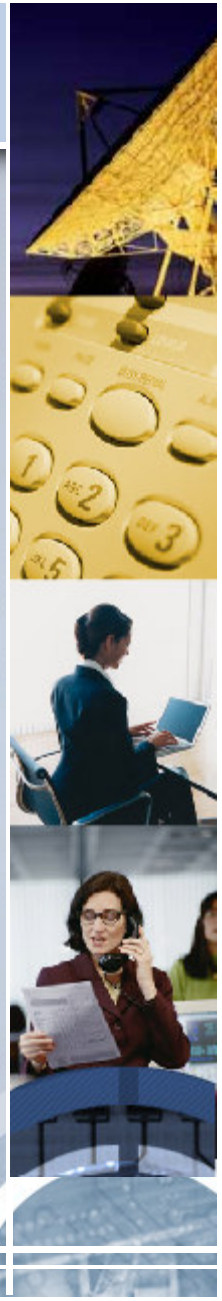
LUTs:

1 Ouargla, Algeria
2 Parana, Argentina
3 Rio Grande, Argentina
4 Albany, Australia
5 Bundaberg, Australia
6 Churchill, Canada
7 Edmonton, Canada
8 Goose Bay, Canada
9 Easter I, Chile
10 Santiago, Chile
11 Punta Arenas, Chile
12 Beijing, China
13 Toulouse, France
14 Hong Kong, China
15 Bangalore, India
16 Lucknow, India
17 Jakarta, Indonesia
18 Bari, Italy
19 Keelŭng, Taiwan
20 Yokohama, Japan
21 Daejŏn, Korea
22 Wellington, NZ
23 Tromsø, Norway
24 Lahore, Pakistan
25 Callao, Peru
26 Arkhangel'sk, Russia
27 Moskva, Russia
28 Nakhodka, Russia
29 Jeddah, Saudi Arabia
30 Singapore
31 Cape Town, South Africa
32 Maspalomas, Spain
33 Bangkok, Thailand
34 Combe Martin, UK
35 Alaska, USA
36 California, USA
37 Guam
38 Hawaii, USA
39 Puerto Rico
40 Texas, USA

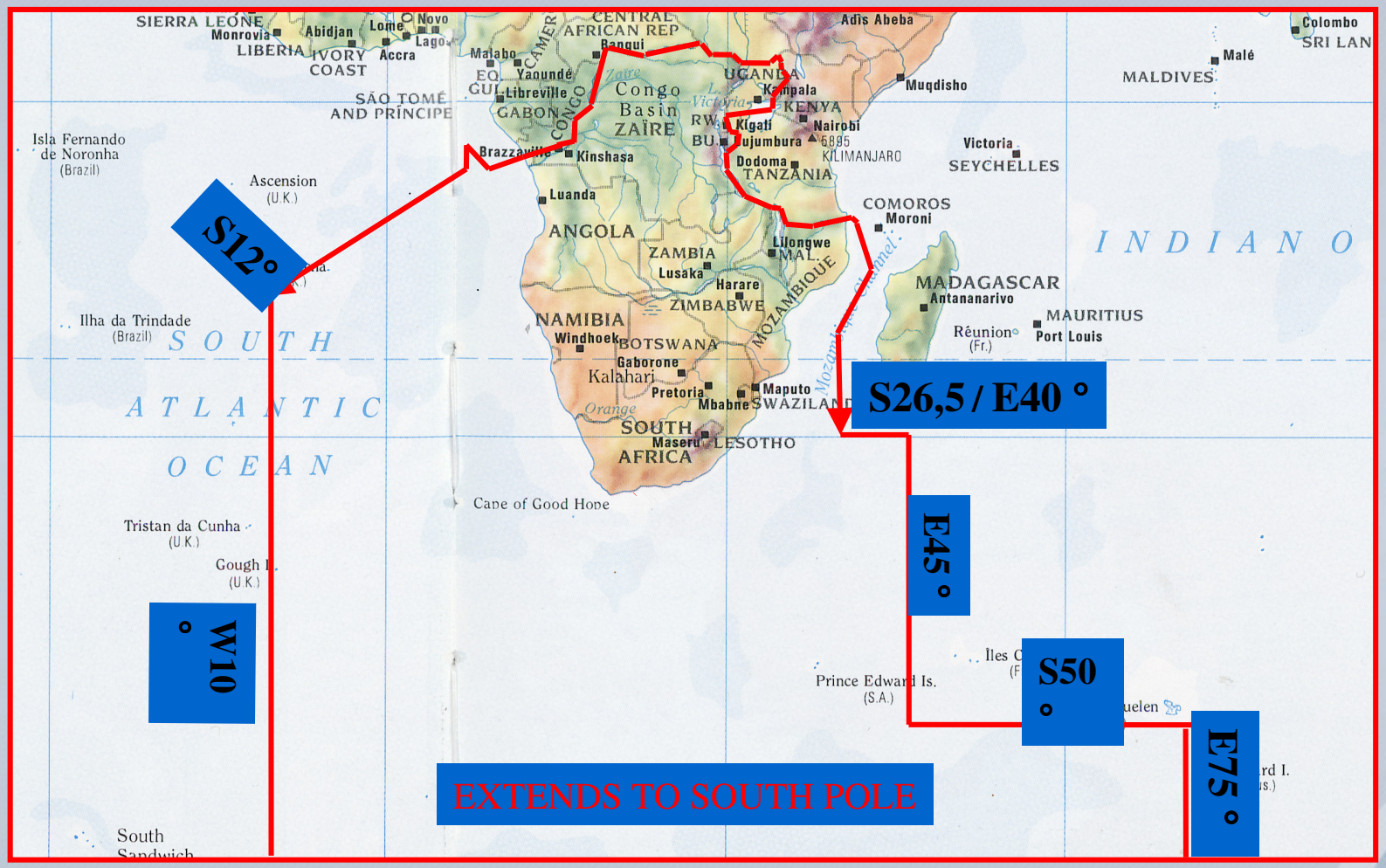
KEY:

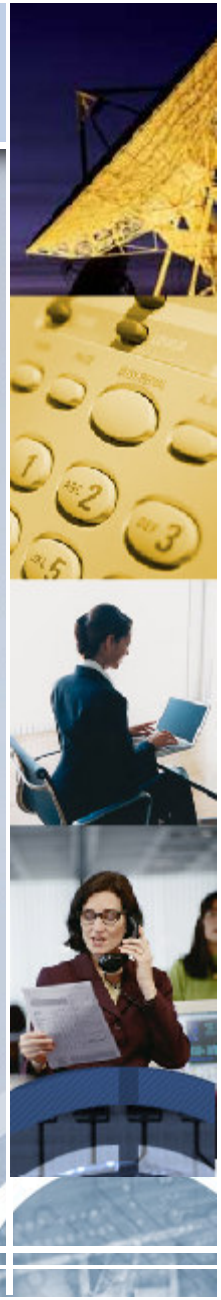
Blue Area: Coverage for 406 MHz **and** 121·5 MHz EPIRBs

Grey Area: Approximate coverage for 406 MHz EPIRBs only



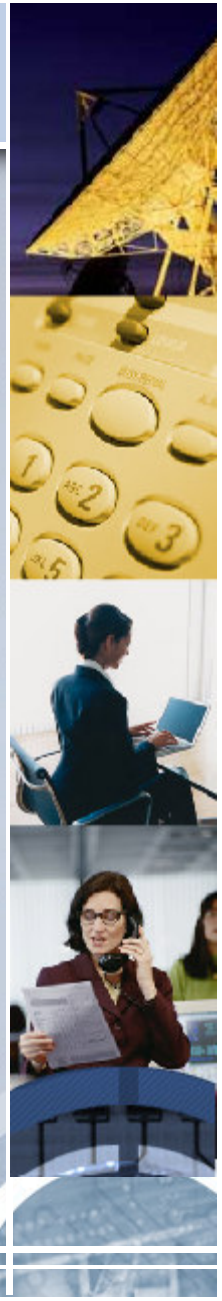
SA's COSPAS/SARSAT responsibility area





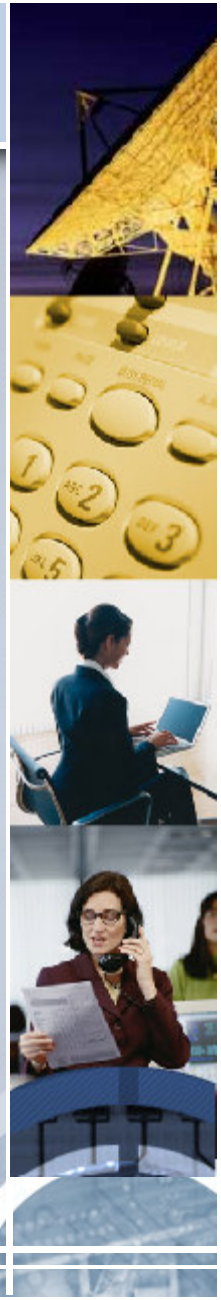
SPOC's in the SA area of responsibility

- **All distress alert data for the responsibility area is submitted to Maritime Rescue co-ordination centre (MRCC) in Cape Town and Aeronautical Rescue co-ordination centre (ARCC) at OR Tambo International airport in Johannesburg.**
- **The MRCC and ARCC take responsibility to co-ordinate in their area of responsibility (SA and Namibia) if appropriate or ensure that the alert data is submitted to the appropriate SAR points of contact (SPOC's) in SA's Cospas Sarsat area of responsibility.**

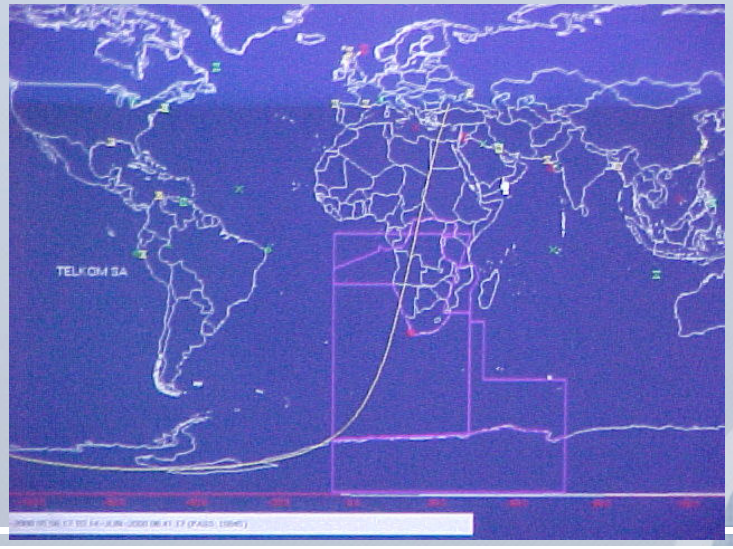


SPOC's in the SA area of responsibility

- Angola
- Botswana
- Burundi
- Democratic Republic of Congo
- Lesotho
- Malawi
- Mozambique
- Namibia
- Rwanda
- St Helena
- Swaziland
- Uganda
- Zimbabwe
- Zambia



COSPAS/SARSAT in SA



Beacon population – South Africa

- EPIRB – 528
- ELT's – 589
- PLB's – 78
- Test units – 1

These are based on 2005 statistics

Beacon Legislation in South Africa

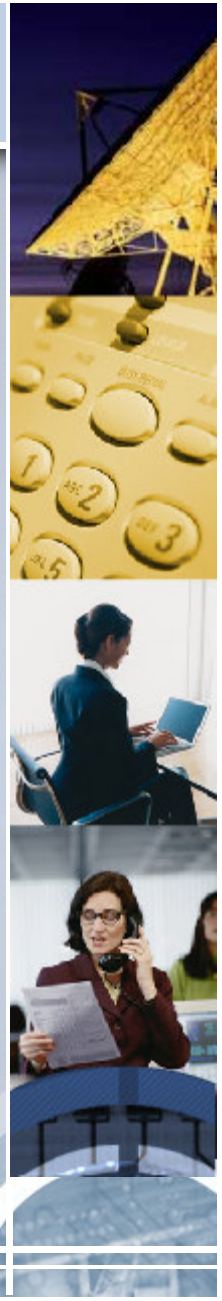
- Emergency position indicator Radio Beacons as used on ships (EPIRB)
  - Only beacons coded with the Maritime Service mobile identity (MMSI) are allowed.
- Emergency locator beacons as used on aircraft (ELT's)
  - Beacons coded according to ICAO standards which means most of the aeronautical coding standards are allowed.
- Personal locator beacons (PLB's)
  - No current legislation
  - In hand with the regulator (ICASA). Legislation expected before end of the year.

Beacon Legislation in South Africa

- In all cases beacons must be registered with the appropriate authorities.
  - MRCC for Maritime EPIRB's and PLB's
  - SA Civil Aviation Authority (SACAA) for ELT's

- Both MRCC and ASMCC keeps synchronized copies of the total register.

- All Cospas Sarsat type approved beacons are by definition allowed for use in SA and do not need separate type approval by the regulator (ICASA)



Thank You